

IN THE CLAIMS

The following listing of the claims is provided in accordance with 37 C.F.R. §1.121.

1. (currently amended) A home laundry machine, comprising:
a laundry enclosure; and
a drying mechanism pneumatically coupled to the laundry enclosure via an air inlet and an air outlet, comprising:
a vapor compression cycle system comprising a condenser, an evaporator, and a compressor disposed in a closed fluid path,
~~a heating device disposed~~wherein the condenser is configured to heat air upstream of the air inlet; and
~~a cooling device disposed~~wherein the evaporator is configured to cool air downstream of the air outlet.
2. (original) The home laundry machine of claim 1, wherein the laundry enclosure is adapted to clean laundry in a cleaning fluid.
3. (original) The home laundry machine of claim 1, wherein the drying mechanism is adapted to recapture a desired portion of the cleaning fluid.
4. (original) The home laundry machine of claim 3, wherein the desired portion comprises a cleaning solvent.
5. (original) The home laundry machine of claim 1, comprising a cleaning solvent tank coupled to the laundry enclosure.

6. (original) The home laundry machine of claim 5, wherein the cleaning solvent tank is adapted to retain a cleaning solvent comprising a siloxane.

7. (original) The home laundry machine of claim 1, comprising an air conduit extending from the air outlet to the air inlet.

8. (original) The home laundry machine of claim 7, comprising a blowing device adapted to flow air through a pneumatically closed air pathway extending through the air conduit, into the laundry enclosure from the air inlet, and out of the laundry enclosure through the air outlet.

9. (original) The home laundry machine of claim 1, comprising a condensate drain disposed adjacent the cooling device and coupled to a fluid recovery system.

10. (cancelled)

11. (currently amended) The home laundry machine of ~~claim 10~~claim 1, wherein vapor compression cycle comprises ~~a compressor and a~~ pressure reducing mechanism.

12. (original) The home laundry machine of claim 1, comprising an agitation device coupled to the laundry enclosure.

13. (original) The home laundry machine of claim 12, wherein the agitation device comprises a motor having a rotational shaft coupled to a rotational axis of the laundry enclosure.

14. (original) The home laundry machine of claim 1, wherein the laundry enclosure is side-loadable.

15. (original) The home laundry machine of claim 1, wherein the laundry enclosure is top-loadable.

16. (withdrawn-currently amended) A system for washing and drying laundry, comprising:

a laundry enclosure;

a cleaning fluid source ~~coupled~~ configured to supply a cleaning fluid to the laundry enclosure;

a drying system coupled to the laundry enclosure, comprising;

a vapor compression cycle system comprising a condenser, an evaporator, a compressor, and a working fluid disposed in a closed path through the condenser, the evaporator, and the compressor; and

a fluid recovery system coupled to the drying system and adapted to recover vaporized cleaning fluid.

17. (withdrawn) The system of claim 16, wherein the laundry enclosure comprises a rotatable receptacle coupled to a motor.

18. (withdrawn) The system of claim 16, wherein the cleaning fluid source comprises a cleaning solvent tank.

19. (withdrawn) The system of claim 16, wherein the cleaning fluid source comprises a water source.

20. (withdrawn) The system of claim 16, wherein the drying system is adapted to vaporize cleaning fluid from articles within the laundry enclosure and to condense the vaporized cleaning fluid for recovery by the fluid recovery system.

21. (withdrawn) The system of claim 16, wherein the drying system and the laundry enclosure define a closed-loop air passageway.

22. (withdrawn-currently amended) The system of claim 21, ~~comprising a~~wherein the vapor compression cycle system is disposed along the closed-loop air passageway.

23. (withdrawn-currently amended) The system of claim 21, wherein the drying system comprises at least ~~one heating device disposed~~ the condenser configured to heat air upstream of the laundry enclosure and at least ~~one cooling device disposed~~ the evaporator configured to cool air downstream of the laundry enclosure.

24. (withdrawn) The system of claim 16, comprising a control system having energy usage minimization parameters.

25. (withdrawn) The system of claim 16, comprising a control system having wash time minimization parameters.

26. (withdrawn) The system of claim 16, comprising a control system having dry time minimization parameters.

27. (withdrawn-currently amended) A laundry cleaning device, comprising:
an enclosure comprising a fluid inlet, a fluid outlet, an air inlet, and an air outlet;
a vapor compression system comprising a condenser, an evaporator, a compressor,
and a working fluid disposed in a closed path through the condenser, the evaporator, and the
compressor;

~~a heating device pneumatically coupled~~ wherein the condenser is configured to heat
air flowing into the air inlet;

~~an air cooling device pneumatically coupled to~~ wherein the evaporator is configured to cool air flowing from the air outlet; and

a cleaning control system comprising cycle time parameters and energy efficiency parameters for a home application.

28. (cancelled)

29. (withdrawn) The laundry cleaning device of claim 27, wherein the enclosure and a conduit extending from the air outlet to the air inlet define a closed-loop air passageway.

30. (withdrawn) The laundry cleaning device of claim 27, comprising a condensate drain disposed adjacent the air cooling device and operatively coupled to a fluid recovery system.

31. (withdrawn) The laundry cleaning device of claim 27, wherein the cleaning control system comprises a wash cycle and a dry cycle.

32. (withdrawn) The laundry cleaning device of claim 31, wherein the wash cycle comprises a cleaning fluid introduction stage and an enclosure agitation stage.

33. (withdrawn) The laundry cleaning device of claim 31, wherein the dry cycle comprises a centrifugal fluid removal stage and a thermal fluid removal stage.

Claims 34-69 (cancelled)

70. (new) The home laundry machine of claim 1, comprising a supplemental heating device configured to heat air upstream of the air inlet to supplement the heat provided by the condenser.

71. (new) The home laundry machine of claim 1, comprising an airflow control configured to change the drying mechanism between a closed airflow system and an open airflow system relative to the atmosphere.

72. (new) The home laundry machine of claim 1, comprising a wash control comprising a plurality of different cleaning fluid selections including a cleaning solvent, a cleaning detergent, and water.

73. (new) The home laundry machine of claim 1, comprising a fluid recovery control configured to enable and disable fluid recovery of a cleaning fluid.

74. (new) The home laundry machine of claim 1, comprising a fluid drain configured to drain waste water and a fluid recovery system configured to recapture a cleaning solvent.

75. (new) The home laundry machine of claim 1, comprising control parameters having a target heated-air temperature greater than about 100 degrees Fahrenheit for the condenser.

76. (new) The home laundry machine of claim 1, comprising control parameters having a target heated-air temperature between approximately 130 and 170 degrees Fahrenheit for the condenser.

77. (new) The home laundry machine of claim 1, comprising control parameters having a target cooled-air temperature less than about 70 degrees Fahrenheit for the evaporator.

78. (new) The home laundry machine of claim 1, comprising control parameters having a target cooled-air temperature between approximately 50 and 80 degrees Fahrenheit for the evaporator.

79. (new) The home laundry machine of claim 1, comprising control parameters having a target airflow rate of about 150 to 300 cubic feet per minute through the laundry enclosure.

80. (new) A home laundry machine, comprising:

a laundry enclosure; and

a vapor compression cycle system configured to evaporate and condense a cleaning fluid from laundry being cleaned within the laundry enclosure.

81. (new) The home laundry machine of claim 80, comprising one or more controls configured to enable a water-based wash cycle and a solvent-based wash cycle.

82. (new) The home laundry machine of claim 80, wherein the vapor compression cycle system comprises a compressor, a condenser, a pressure reducing device, and an evaporator in a closed-loop using a working fluid.

83. (new) A home laundry machine, comprising:

a refrigeration cycle system comprising a compressor, a condenser, a pressure reducing device, and an evaporator disposed in a closed-loop using a refrigerant.

84. (new) The home laundry machine of claim 83, wherein the condenser and the evaporator are disposed in a closed-loop air path through a laundry enclosure.

85. (new) The home laundry machine of claim 83, comprising a washing system and a drying system disposed in a single chassis, wherein the drying system comprises the refrigeration cycle system.